

FLT Geosystems

Leica System 1200 GPS User Guide

Connecting to Reference Station Networks: Configuring the Sensor for RTK Site Corrections

Updated (FDOT) FPRN NTRIP Example

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Purpose

This guide illustrates how to change user-defined settings on your System 1200 GPS sensor to receive corrections from a Reference Station Network. The Florida Permanent Reference Network is used as an example.

This guide assumes that the user's sensor is already set up for a Cellular modem with System 1200 RTK rover configurations. It is further assumed that the user has basic familiarity with the Leica 1200 sensor.

The following are some notes regarding the RTK corrections available to the GPS receiver and what those options mean for the user.

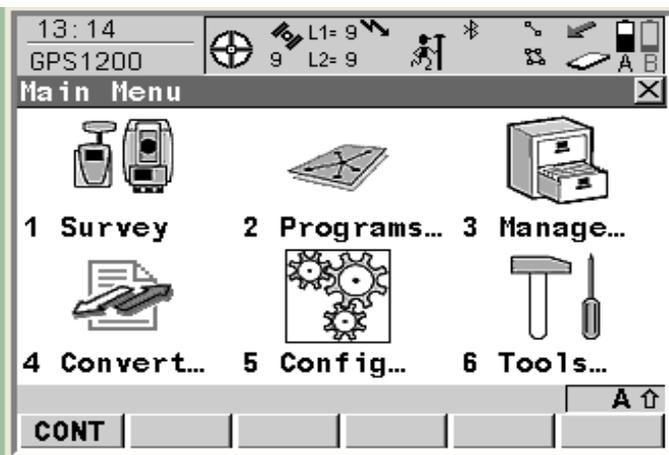
- There are different RTK messages and RTK Products available to the rover. These RTK outputs are defined within the provider's Reference Station Software and are available to the user via assigned IP addresses and ports.
- The RTK data message consists of several pre-defined RTCM formats or CMR+ message formats. RTCM (Radio Technical Commission for Maritime Services) sets international standards for generic differential GNSS broadcast formats. These may be in differing adopted versions, i.e. ver.2.x, or 3.x.
- Together with the type of message, the type of correction broadcast may be Single Baseline corrections, the "Nearest" function or Network-derived corrections (MAX, iMAX, etc.) Single Baseline setting allows user to pick a Reference Station via the MountPoint table. "Nearest" function automatically selects the Reference Station nearest to the user. Network corrections for Leica Rovers may be Max or i-Max corrections.
- These formats are sent to a pre-defined Internet address with separate IP ports assigned for different data and message types. NTRIP connections allow multiple correction types on single ports. The user accesses the RTK products in the MountPoint table by pressing the Source (SRCE) key and then selecting the correction or correction source desired.

To configure your rover for Reference Network connections, follow the steps outlined on the following pages.

This guide revised Sept. 2013 for FPRN updates and NTRIP connections. FPRN products depicted here are for example. The user should configure the RTK rover for the sites or products they deem appropriate for their use. FPRN products require registration at the FPRN website to create account. Registration page for the FPRN is at <http://204.90.21.205/sbc/>

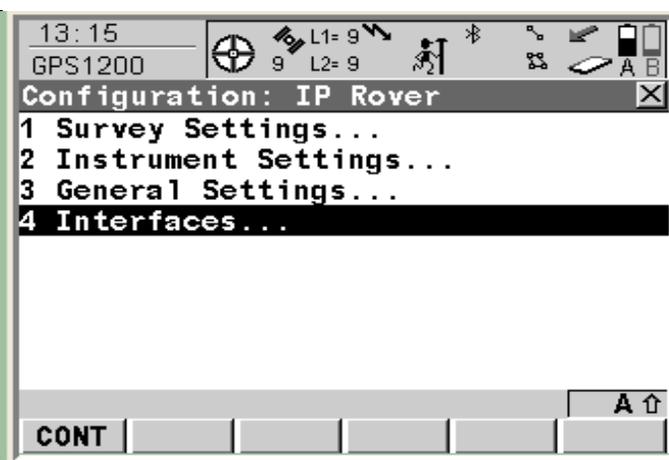
Within the rover configuration...
From the Main Menu, select
the (5)Configuration Icon.

Select F1 CONT



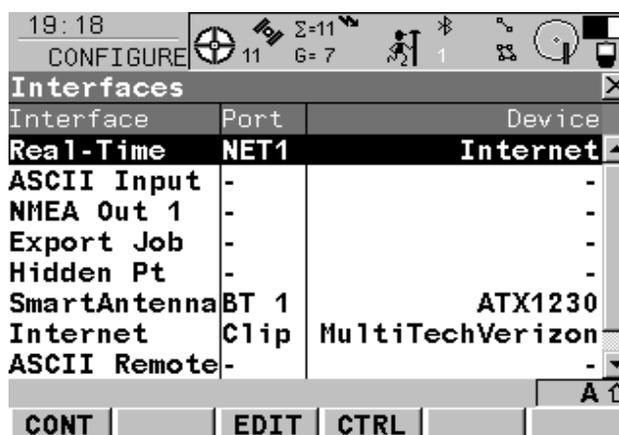
In Configuration, highlight (4)Interfaces

Select F1 CONT

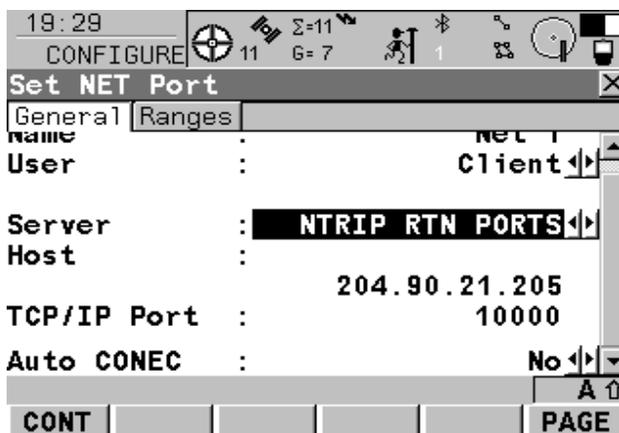


In Interfaces, highlight the Real-Time
Option.
The Port should already be set to NET1

Select F4 CTRL to view existing
IP Address and Port settings



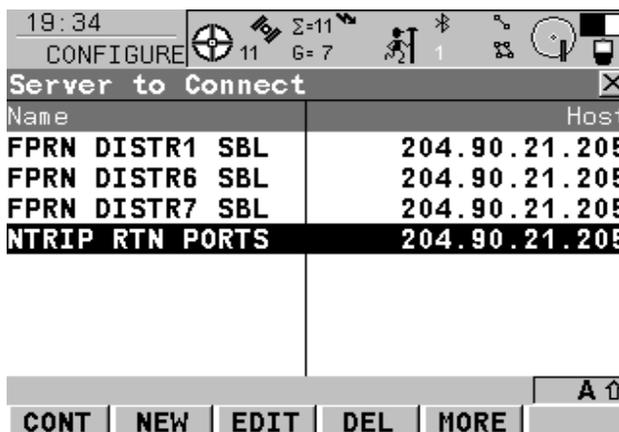
Highlight the Server field and press ENTER to edit or create a new connection



To EDIT Existing Site

From the Server list, To make changes to an existing site highlight site and Select F3 EDIT.

Make changes, then F1 STORE.

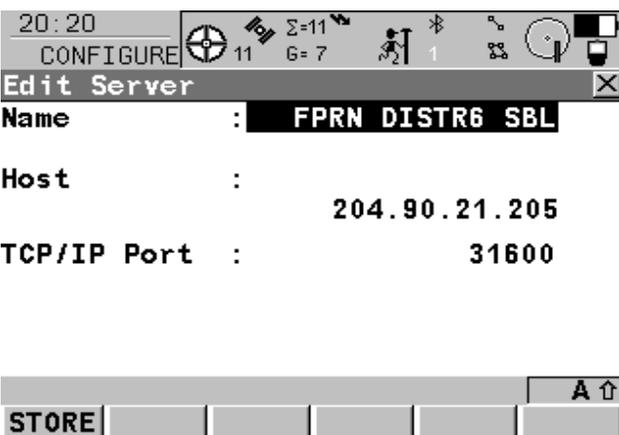


To Create New Site

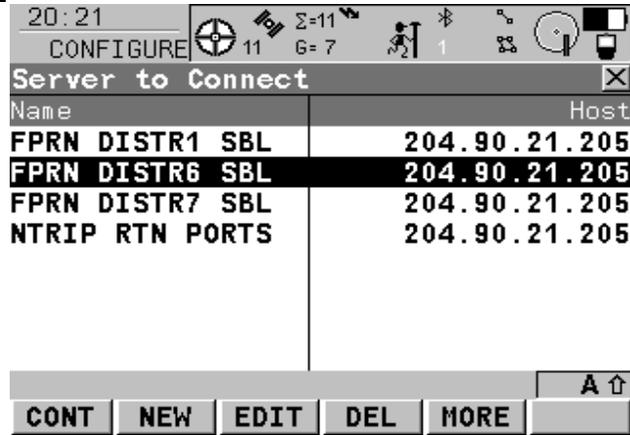
To create a new site in the Server List, Select F2 NEW

Enter Site name, IP Address and the Port. When complete,

Select F1 STORE



This returns you to the Server List.

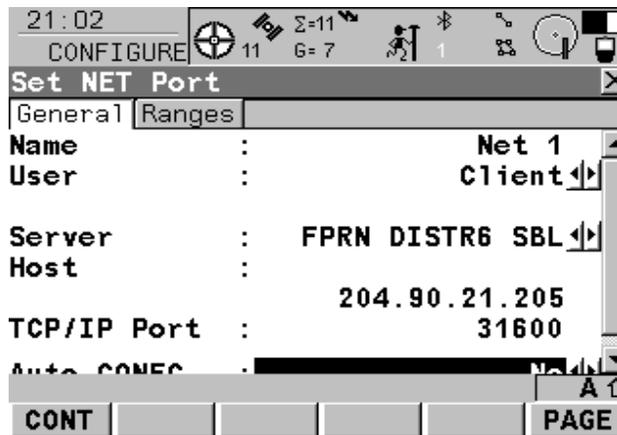


Highlight the desired server and ...
Confirm your current site selection.

Select F1 CONT

This returns you to the Set NET Port Screen.

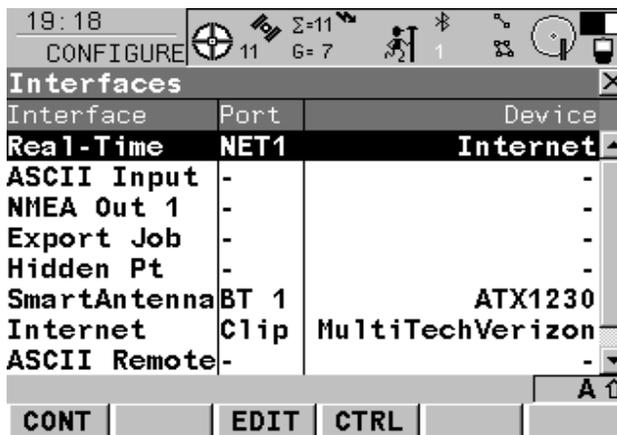
In this example we are selecting a
Single Baseline port in District 6.



Select F1 CONT

This returns you to Interfaces Screen

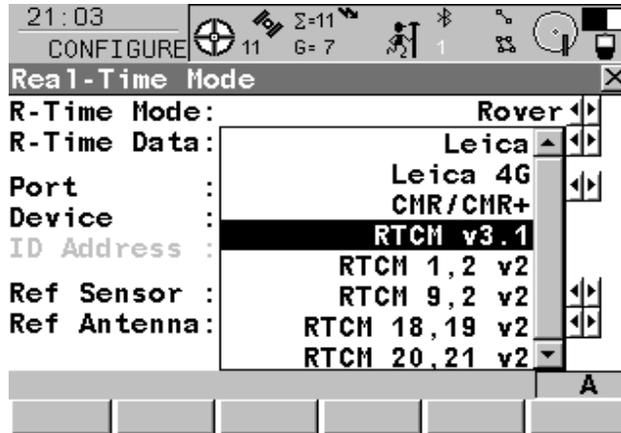
Select F3 EDIT to change Real-Time
settings.



Set the correct data type to match your Port and RTK correction

For this Nearest site, we will use RTCM v3 data

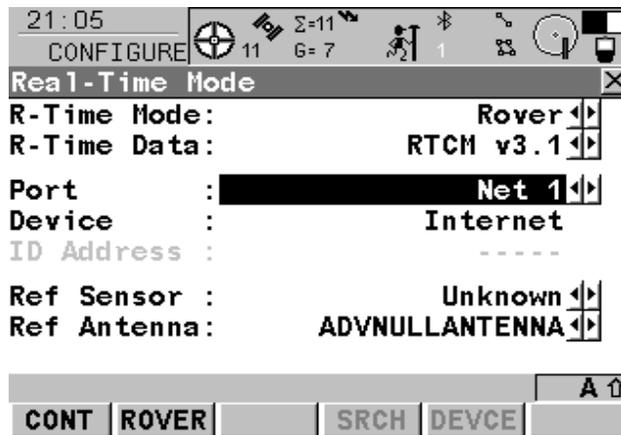
Highlight R-Time Data Field.
Select RTCM v3.1 as Data Type.



Set Ref Sensor to Unknown.

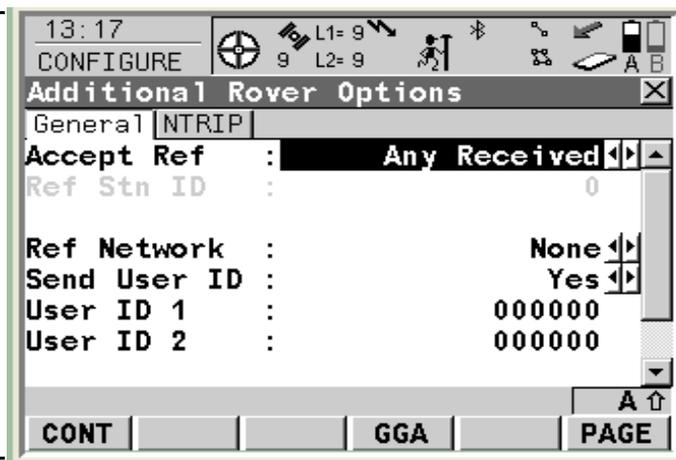
Set Ref Antenna to ADVNULLANTENNA

Select F2 ROVER



Rover Options allows the user to select the Ref Network correction type and to set a User ID and Password,

(The NTRIP settings Page is accessed from this screen as well.)

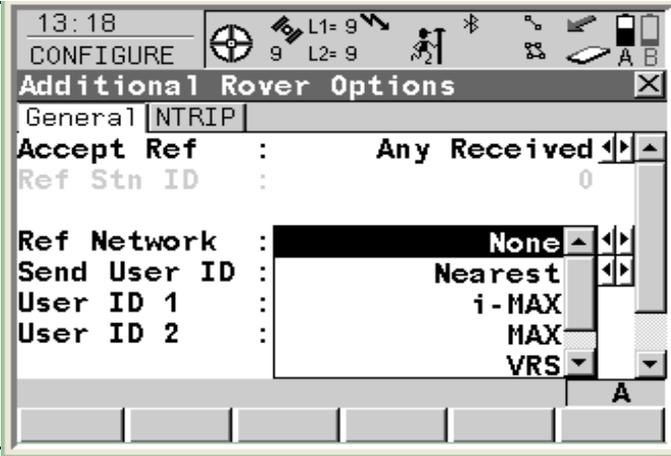


If Using Baseline Data, Ref Network is set at NONE. If using NEAREST or MAX corrections, select the appropriate Ref Network setting

We are using None in this example...

Set User ID setting here to: No

FPRN User ID and PWD will be set in NTRIP settings.



Select F4 GGA



Set GGA Position to : Automatic
Select F1 CONT

Select F1 CONT again

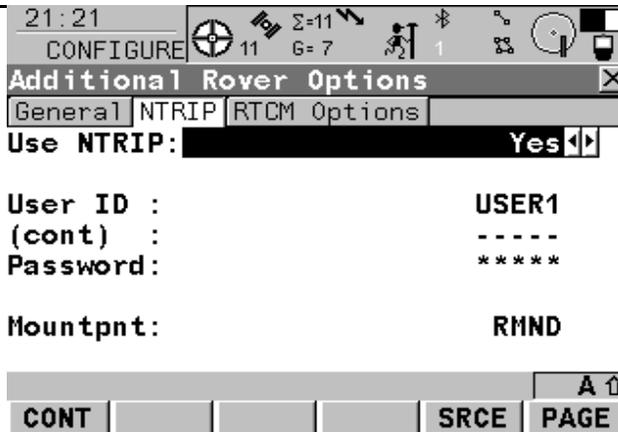


Select the NTRIP Tab for settings.

Use NTRIP is Yes to allow configuring

Enter USER ID from your FPRN account
Enter your matching Password.

Select F5 SRCE to see the MountPoint table. Highlight and select desired Site or desired RTK Product (Near, MAX, etc.)
F1 CONT to return to Rover Options Page.
F1 CONT again

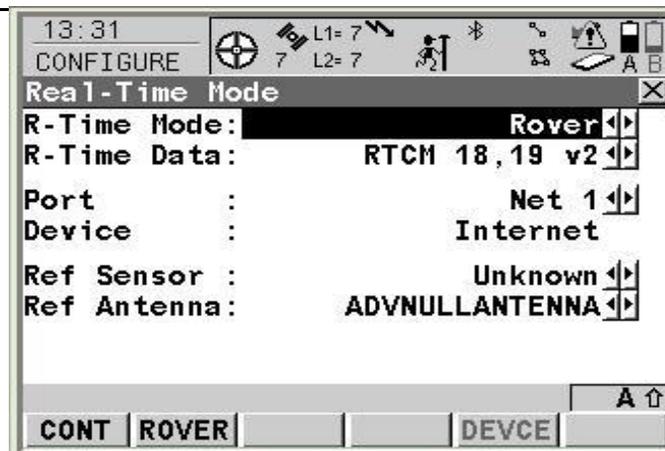


This returns you the Real-Time Mode screen.

Select F1 CONT to Interfaces Screen.

Select F1 CONT again to return to the Main Menu.

Begin Survey or Stakeout Operations.
Press SHIFT, then CONEC



Note: Real Time Data format can remain RTCM v3 for all connections for your Leica equipment.

If changing from SBL (Single Baseline) to Network (MAX or Near) make sure to change the Rover setting Ref Network between None and Max or Nearest.

Remember to re-select the MountPoint in the NTRIP tab if you select different product.